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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,861	01/31/2005	Willmut Zschunke	ZSHUNKE ET AL 2 PCT	4874
25889	7590	03/25/2008		
COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576				
EXAMINER				
TAYONG, HELEN E				
ART UNIT		PAPER NUMBER		
2611				
MAIL DATE		DELIVERY MODE		
03/25/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/522,861

**Applicant(s)**

ZSCHUNKE ET AL.

**Examiner**

HELENE TAYONG

**Art Unit**

2611

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23, 25-31 and 33-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23, 25-31 and 33-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Acknowledgement is made of the amendment received on 1/16/08.

### *Claim Objections*

2. Claims 23, 25, 27, 29, 33, 35 and 37 are objected to because of the following informalities:

- (1) In claim 23, lines 1-2, change "the bit rate" to - - a bit rate - -;
- (2) In claim 23, lines 3-4, change "the modulator and the demodulator" to - - a modulator and a demodulator --;
- (3) In claim 23, lines 4-5, change "the bit stream" to - - a bit stream - -;
- (4) In claim 23, lines 4-5, insert - -into two bit streams - - between - - "the QPSK signals" and "comprising the following characteristics";
- (5) In claim 23, lines 12-13, change "the alternating real and imaginary spectra is implemented" to - - an alternating real and imaginary spectra is implemented- -;
- (6) In claim 23, lines 18-19, change "the band width " to - - a band width - -;
- (7) In claim 23, line 20, change "the zero places" to - - zero places - -;
- (8) In claim 23, lines 24-25, change "a sine carrier or a cosine carrier" to - - the sine carrier or the cosine carrier - -;
- (9) In claim 23, lines 26-27, change "the receiver with demodulator" to - - a receiver with the demodulator- -;

(10) In claim 23, line 35, change "the higher frequency" to - - a higher frequency - -;

(11) In claim 23, line 37, change "the roots of the Nyquist flanks" to - - roots of Nyquist flanks - -;

(12) In claim 23, line 38, change "the upper flank of p1" to - - an upper flank of p1 - -;

(13) In claim 23, line 38, change "the lower flank of p2" to - - a lower flank of p1 - -;

(14) In claim 23, line 39, change "the upper flank of p2" to - - an upper flank of p2- -.

(15) In claim 25, line 3, change "the factor" to - - a factor - -;

(16) In claim 25, line 4, change "the upper and lower frequency range" to - - an upper and a lower frequency range - -.

(17) In claim 27, line 3, change "the scanning samples" to - - scanning samples - -.

(18) In claim 29, line 4, change "and that the pulse response" to - - and wherein the pulse response - -;

(19) In claim 29, lines 6-7, change "and that these pulse responses" to - - and wherein these pulse responses - -;

(20) In claim 29, lines 6-7, change "the product" to - - a product - -;

(21) In claim 29, line 7, change "a higher frequency" to - - the higher frequency - -;

(22) In claim 33, line 3, change "the cross-talk of the adjacent channels" to - - cross-talk of adjacent channels - -.

(23) In claim 34, line 2, change "the loss of approximately 3 dB" to - - a loss of approximately 3 dB - -.

(24) In claim 35, line 7, change "a cosine carrier and a sine carrier" to - - the cosine carrier and the sine carrier - -.

(25) In claim 37, lines 3-4, change "a cos crest channel" to - - the cosine crest channel - -. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 23-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(1) In claim 23, line 8, recites the limitations, "one purely imaginary spectrum ( $p_2$ )" and in lines 16 and 30 "purely imaginary transmission function ( $p_2$ )", It is unclear if these spectrums are the same.

(2) In claim 23, line 16, recites the limitations, "RSB filtering" and in line 36, recites the limitations, "RSB demodulation", it is unclear what RSB means.

(3) In claim 23, lines 37- 39, recites the limitations, "the Nyquist flanks lie symmetrical to  $\omega_g/2$  for the upper flank of  $p_1$  and the lower flank of  $p_2$ , and lie at  $\omega_g$  for the upper flank of  $p_2$ ", It is unclear what flanks,  $\omega_g/2$  and  $\omega_g$  are.

### **Allowable Subject Matter**

5. Claims 25-31, 33-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim, overcome 112 2<sup>nd</sup> rejection and any intervening claims.

The following is an examiner's statement of reasons for allowance: The following is a statement of reasons for the indication of allowable subject matter: The prior art Debabrata Saha ( "Quadrature-Quadrature phase-shift keying", IEEE transactions on communications, Vol. 37, No. 5, May 1989, pages 437-448) and Feher (US 20020181547) do not teach wherein the roots of the Nyquist flanks lie symmetrical to for the upper flank of P1 and the lower flank of P2, and lie at for the upper flank of P2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **Conclusion**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENE TAYONG whose telephone number is

Art Unit: 2611

(571)270-1675. The examiner can normally be reached on Monday-Friday 8:00 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Helene Tayong/  
Examiner, Art Unit 2611

March 14, 2008  
/Shuwang Liu/  
Supervisory Patent Examiner, Art Unit 2611